

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Reconstruction of Union Island Salinity Monitoring Station

EA-07-07



U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South Central California Area Office
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List of Acronyms, Abbreviations, and Definition of Terms

Af(y) or af/y	Acre-feet (per year). One acre-foot equals 325,851 gallons (the volume of water one foot deep and an acre in area)
Ag	Agricultural typically referring to the purpose of use of Water
CNDDDB	California Natural Diversity Database
CO	Contracting Officer
COA	Coordinated Operations Agreement
Contractor	City, county water or irrigation District contracted with Federal or State Agencies to obtain water.
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVP Contractor	Friant Division or Cross Valley Division Long-Term Contractor
D-1641	State Water Resources Control Board Water Right Decision 1641
Delta	Sacramento-San Joaquin Delta
DWR	(California) Department of Water Resources
EA	Environmental Assessment
EC	Electrical Conductivity
ESA	Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
ITA	Indian Trust Assets
M&I	Municipal and Industrial, typically referring to the purpose of use of water
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PCE	Primary Constituent Element
Projects	Central Valley Project and the State Water Project
Reclamation	U.S. Bureau of Reclamation
RRA	Reclamation Reform Act of 1982
Service	U.S. Fish & Wildlife Service
SJR	San Joaquin River
SJRA	San Joaquin River Agreement
Station	Union Island Salinity Monitoring Station
SWP	(California) State Water Project
SWRCB	State Water Resources Control Board
T&E Species	Threatened and Endangered species, as defined by the Federal Endangered Species Act
USFWS	United States Fish and Wildlife Service

Section 1 Purpose and Need for Action

1.1 Background

The Bureau of Reclamation (Reclamation) operates the Central Valley Project (CVP) subject to several water right permits issued by the State Water Resources Control Board (SWRCB). Water Rights Decision 1641 (D-1641), issued by the SWRCB on December 29, 1999, and amended March 15, 2000, amended Reclamation's water rights permits to add items and conditions that are intended to protect municipal and industrial, agricultural, and fish and wildlife beneficial uses of the Sacramento-San Joaquin Delta (Delta). The CVP and the State Water Project (SWP), operated by the State of California Department of Water Resources (DWR), are operated in coordination to meet the terms in D-1641 relevant to each project. Operating these projects to meet specific numerical criteria at specific locations in the Delta is a daunting task. The Delta is a dynamic environment affected by natural forces such as tides, wind, and floods. Reservoir releases in the Sacramento River basin to support Delta water quality take one to five days to reach the Delta. Continual monitoring of Delta conditions and forecasting of future conditions are essential for assuring the daily decisions regarding reservoir releases and amounts pumped from the Delta will meet the water quality objectives of the Delta. (DWR 2006)

Levee breaks, unexpected high discharges of salts, limited circulation in some parts of the Delta, and other factors effecting water quality are beyond the control of the operation of the CVP. The water quality objectives for the stations in the south Delta (Old River at Tracy, the Union Island Salinity Station also called Old River at Middle River, and Brandt Bridge on the San Joaquin River (SJR)) are particularly difficult to meet. The water quality at these locations is extremely dependent upon the upstream water quality of the San Joaquin River, local agricultural discharges and limited circulation in local channels.

The CVP can control SJR water quality through releases to the San Joaquin River from New Melones Reservoir on the Stanislaus River. The water rights permits for New Melones Reservoir contain water quality objectives for the SJR at Vernalis and further downstream at Brandt Bridge, as well as objectives for Old River.

Reclamation was directed under federal law (HR 2828 – Public Law 108-361) to develop and implement a program to meet all existing water quality objectives for which the CVP has responsibility.

In February 1961, the SWRCB adopted Water Right Decision 990, which approved water rights for the Central Valley Project. This led to the development of water quality standards for the Sacramento-San Joaquin Delta with the adoption of agricultural salinity standards as terms and conditions of Water Right Decision 1275 in May 1967. Ultimately, these and other Decisions, led to the development of a series of 23 Salinity Monitoring Sites in the Delta which are operated and maintained by the Bureau of Reclamation. Information from these sites is sent automatically by radio in one-hour intervals to the Central Valley Office in Sacramento for analysis. If the monitoring stations indicate that the levels of salinity have exceeded specific levels, then water is released from the reservoir system to reduce the salinity in the Delta.

At one of these 23 monitoring sites in the southern Delta is the Union Island Salinity Monitoring Station (Station.) It is critically located at the intersection of the Middle River and the Old River in San Joaquin County (Figure 1). The Station was originally built over 20 years ago and contains water quality monitoring (for salinity/electrical conductivity and temperature) and telemetry equipment. Age, vandalism, and high stream flows have deteriorated the Station. In 1998 exceptionally high flows from El Nino rains eroded wooden piles, walkways and the foundations of the buildings.

1.2 Purpose and Need

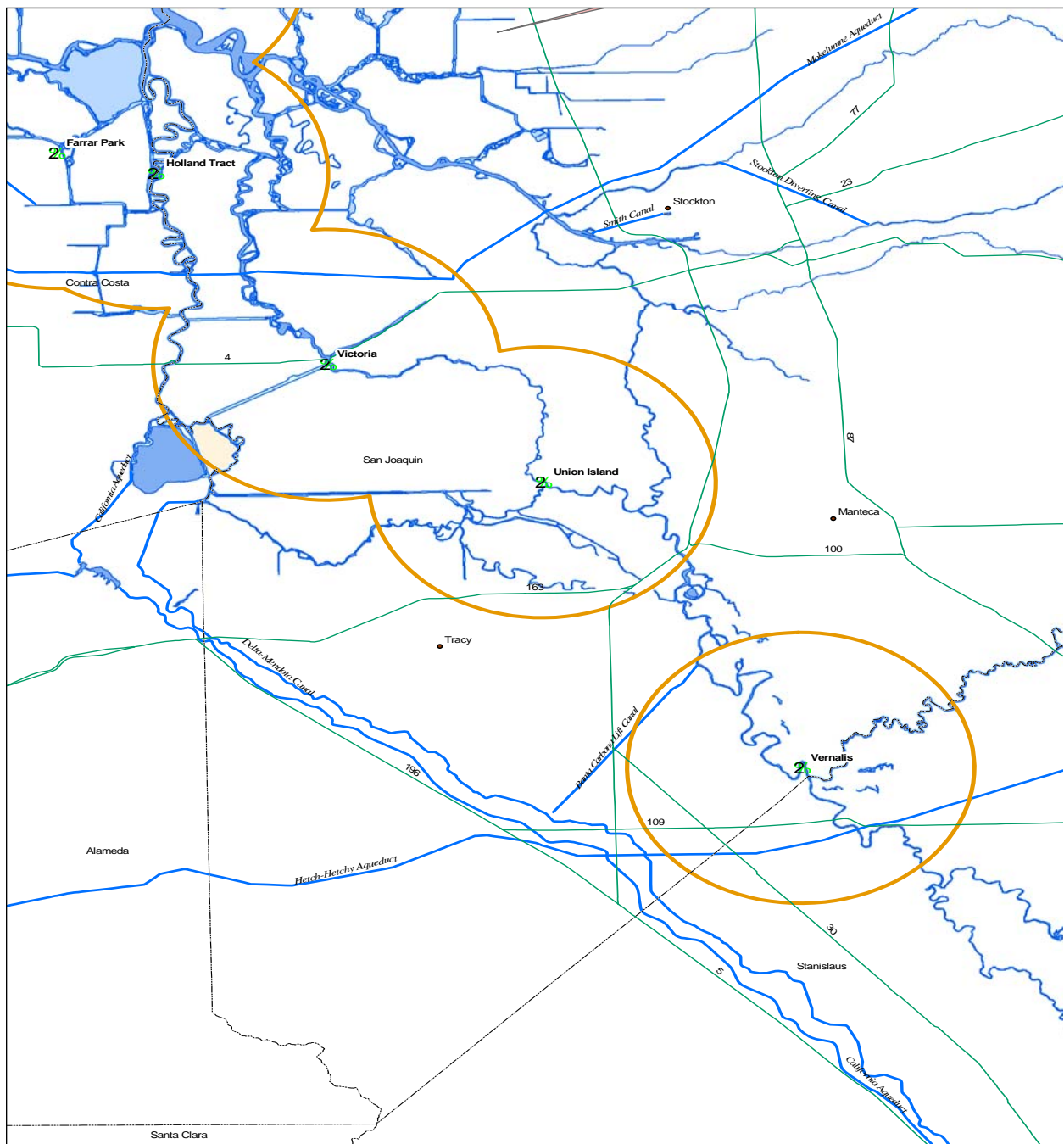
The purpose of the proposed action is to repair the Union Island Salinity Monitoring Station by replacing the entire structure with better quality materials to withstand deterioration. The repairs are needed to correct unsafe and dangerous conditions to employees who service and maintain the monitoring tools on and inside the Stations and to protect the telemetry equipment contained within the Stations. Additionally, a functioning station is needed to provide real-time information to Reclamation and DWR so that water quality objectives can be complied with and stored water releases can be optimized.

1.3 Scope

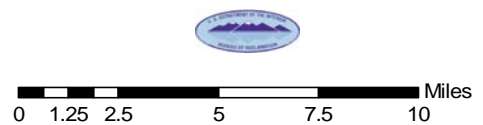
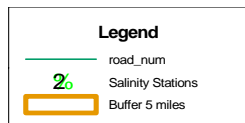
In Accordance with Section 102 (2) (c) of the National Environmental Policy Act of 1969 (NEPA), as amended, Reclamation has prepared this Environmental Assessment (EA) which analyzes the demolition and reconstruction of Union Island Salinity Monitoring Station. This will include the removal of the old structures and the installation of new walkways, pilings and buildings that are made of more durable materials. The project will be reconstructed within the essentially the same footprint as the current station. The analysis in this EA will focus on the immediate vicinity of the project and the Delta within San Joaquin County.

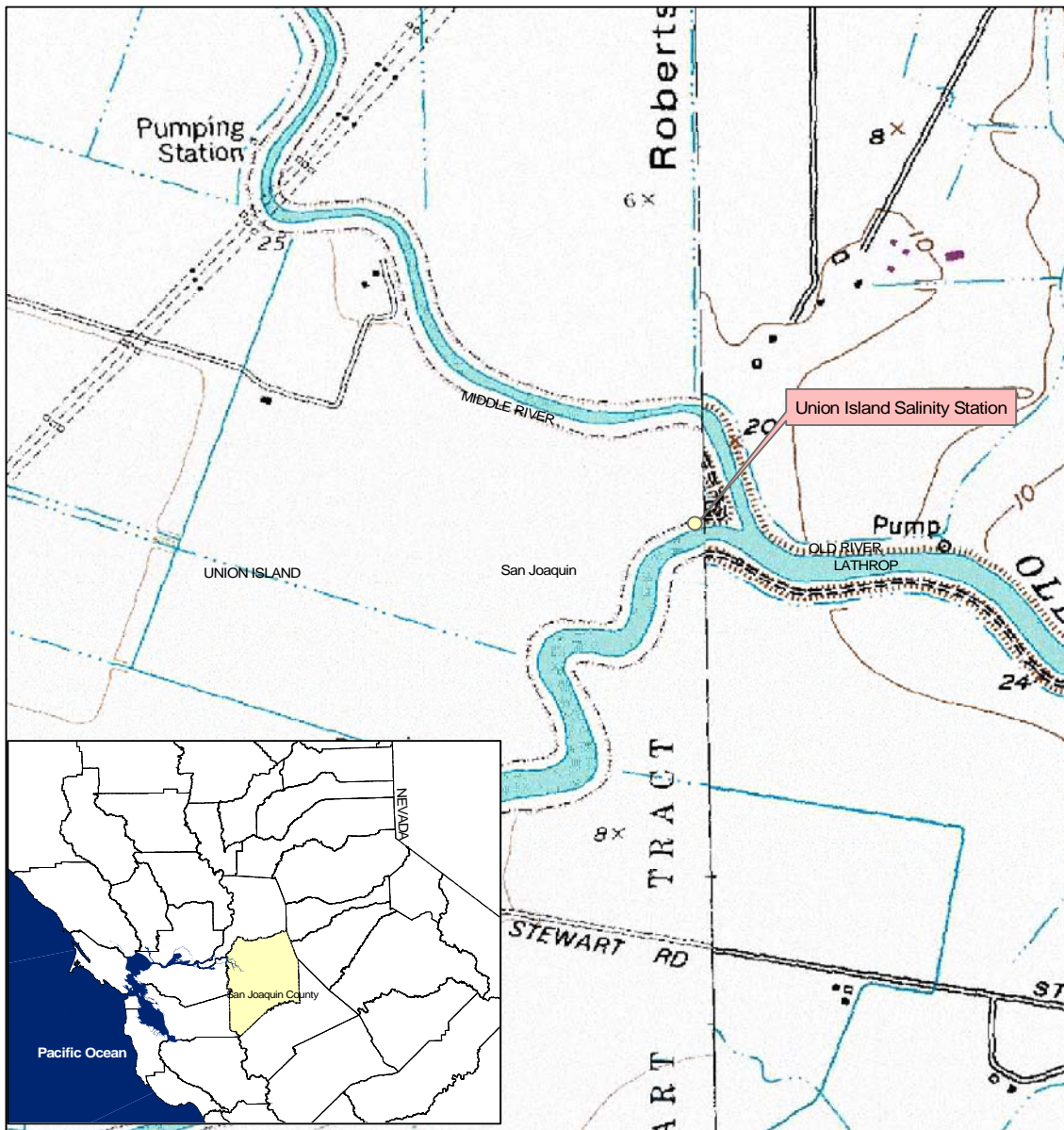
1.4 Potential Resource Issues

- Surface Water Resources
- Biological Resources
- Socioeconomic Resources
- Cultural Resources
- Indian Trust Assets
- Environmental Justice



Union Island Salinity Station
Location Map
Figure 1





0 0.045 0.09 0.18 0.27 0.36
Miles

Location Map
Union Island Salinity Station
San Joaquin County
Union Island & Lathrop Quadrangles
Figure 1

Section 2 Alternatives Including Proposed Action

This EA considers two alternatives: The No Action Alternative and the Proposed Action. The No Action Alternative reflects current conditions with regard to the Proposed Action and projected future conditions without the project. It serves as a basis of comparison for determining potential effects to the human environment that would result from implementation of the Proposed Action.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the reconstruction of the Station. The structures would continue to deteriorate and eventually water quality data would no longer be acquired from this site. Discontinuity in the flow of data to the Central Valley Operations Office could result in delays in releasing water at New Melones Reservoir to push salt water back towards the ocean and potential violations of required water quality standards in the southern Delta. Without this approval, Reclamation would not be allowed to proactively repair the facilities to prevent injuries or mishaps to employees or the public resulting in increased maintenance costs and/or potential lawsuits.

2.2 Proposed Action

Under the Proposed Action, Reclamation would approve the reconstruction of the Station. Reclamation proposes to repair the Station by replacing the entire structure with better quality materials to withstand deterioration.. A private construction team hired by Reclamation would be brought in to demolish the current station and rebuild a new station. The project is located at the intersection of the Middle River and Old River, Union Island Quadrangle, San Joaquin County.

The existing Station consists of eight 12" diameter wooden piles, a 120' long x 3' wide wooden walkway, and a 5' 5" W x 6' 8" L x 8' H metal building. All supports and guard railing related to these structures would be removed as well. The contractor would then reconstruct the Station with the centerline of the new facility following the existing facilities centerline although the newly constructed station will be elevated 7.5' above the level of the current station. The new Station would consist of ten 12" diameter fiberglass pilings, eight at 45' and two at 40'. There would be three aluminum walkways with dimensions of 40' L x 3' W. Each walkway will weigh approximately 1,600 lbs. The building would be 8' W x 10' L x 8' H, weighs approximately 2,500 lbs and consist of a prefabricated cargo container.

Currently, the piles are of a monopole nature (single piles spaced relatively close to support the walkway). Reclamation would remove the piles, then install paired pilings spaced at a greater distance allowing a greater span and a greater height. (Pers Comm Brian Shinmoto June 2007)

Piles would be driven to a minimum penetration of 10' into the bottom of the channel. There would be no excavation or disturbance to the bottom of the channel.

The Proposed Action is a complete replacement of the Union Island Salinity Station with up-graded materials to withstand the environmental conditions of the Delta. These new materials are expected to lengthen the life of the structure and make repairs and modifications occur less frequently. The extended life and reliability of the new structure would facilitate continuous water quality data gathering.

Construction Requirements

The Proposed Action is anticipated to require three months to complete. All construction in the water courses must take place in August and September. The contractor shall provide a work schedule outlining all stages of the project to Reclamation for review and approval at least two weeks prior to start of work. The reconstruction of the Station would be in the five stages as described below:

1. Demolition of existing facility.
2. Installation of fiberglass piling.
3. Installation of aluminum walkway.
4. Construction of a reinforced concrete pad to support the land end of the walkway.
5. Installation of building to hold telemetry equipment.

The contractor shall, without additional expenses to Reclamation, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of work. The contractor is responsible for the following designs:

1. Connections to the fiberglass piles and walkways.
2. Reinforced concrete walkway support.
3. Cross braces.
4. Walkway supports (I-beams).
5. Framing for supporting the salinity building.
6. Welds.

The contractor's designs shall meet the following criteria:

1. All connections to the fiberglass piling must adhere to the manufactures recommendations
2. All pilings shall be paired. No monopole supports will be allowed.
3. The piling pairs shall have two 6"x 6" x 5/16" angle cross braces.
4. The metal building shall be supported by four piles with eight angle braces.
5. Each piling pair shall be separated by five feet..
6. The piling pairs shall support W10x49 I beams which in turn will support the aluminum walkways.
7. Walkway installation must adhere to the manufactures recommendations.
8. All aluminum shall be isolated from non-aluminum metal.
9. Metal framing, braces, and support members shall be black steel.

Construction materials that would be required to complete the reconstruction of the Station include fiberglass piles, aluminum walkways, metal salinity building and concrete. Equipment that would be required for Station replacement would include a barge, barge crane, pile driver, truck crane, haul truck and pick-up trucks. No explosives of any kind would be used on this jobsite. Construction times would be Monday through Friday from 7:00 am until 4:00pm.



Section 3 Affected Environment and Environmental Consequences

The Section identifies the affected environment, conditions that currently exist, and the areas of concern that may be affected by the Proposed Action. This section also identifies the environmental trends that currently exist.

3.1 Surface Water Resources

3.1.1 Affected Environment

The Delta is located at the confluence of the Sacramento and San Joaquin Rivers. The Delta covers 738,000 acres and is a series of islands interlocked with hundreds of miles of waterways (Figure 2). The Delta and its waterways are within the boundaries of Solano, Contra Costa, Sacramento, San Joaquin, Alameda and Yolo Counties. The proposed action lies within San Joaquin County as previously mentioned. The Delta's waterways eventually converge and flow west into the San Francisco Bay and out to the Pacific Ocean. Historically, over 40 percent of the State's runoff flowed to the Delta from the Sacramento, Mokelumne, Consumes, Calaveras, and San Joaquin Rivers. Many of the waterways follow natural courses while others have been constructed for specific purposes such as navigation, circulation, or to obtain materials for levee construction. (DWR 2006)

Today, the Delta is the hub of the State's water distribution system. About two-thirds of all Californians and millions of acres of irrigated farmland rely on the Delta for water from the State Water Project and federal Central Valley Project. Delta water is vital to California's economy, fifth largest in the world, and its growing population, expected to reach 53 million by 2030 (Department of Finance 2007).

As a water distribution system, the Delta not only serves the State and federal projects but also many agricultural and municipal water diverters surrounding and within the Delta itself. Delta water from the State Water Project serves both urban and agricultural areas in the Bay area, the Silicon Valley, the San Joaquin Valley, the Central Coast, and Southern California.

Historically, tidal activity and outflow of the Delta created a gradual salinity gradient from the Pacific Ocean into the Delta. Saltwater made its way into the Delta especially in dry years when decreased amounts of freshwater outflow were insufficient to push saltwater back towards the ocean.

D-1641 requires Reclamation and DWR to meet water quality objectives at a number of locations in the western, interior and southern Delta to protect beneficial uses. Of most interest related to this project is the southern Delta. To meet D-1641 objectives in the delta, the Projects rely on three principal reservoirs, reduction in Project exports, and opening of the Delta Cross Channel Gates (DCCG). The upstream Project reservoirs include Lake Shasta and Folsom Lake operated by Reclamation and Lake Oroville operated by DWR. Delta export facilities include the “Bill” Jones Pumping Plant operated by Reclamation and Clifton Court Fate Structure and Harvey O. Banks pumping Plant operated by DWR. The DCCG which connects the Sacramento River with the Mokelumne River and the interior Delta is operated by Reclamation. The respective sharing of water costs between the two Projects to meet these objectives is determined by the 1986 “Agreement Between the United States of America and the State of California for Coordinated Operations of the Central Valley Project and the State Water Project or Coordinated Operations Agreement” (DWR 2006)

Water Quality

In an average year, CVP water supplies carry more than 800,000 tons of salt into the northern portion of the San Joaquin Valley. Most of this salt load originates from the Delta and approximately 350,000 tons of this salt load are ultimately recycled back to the Delta via the San Joaquin River through agricultural surface and subsurface returns and wetland discharges (DWR 2001.)

Currently data from all three southern Delta compliance station gages (including Old River at Tracy, the Station and San Joaquin River at Brandt Bridge) are transmitted on a real-time basis and posted on the CDEC website (<http://cdec.water.ca.gov>). (The Station is recorded as “UNI”.) The compliance monitoring staff at Reclamation and DWR monitor water quality at all the southern Delta compliance stations in near real-time. In addition, DWR now reports the daily and 30-day average electrical conductivity (EC) values for these stations in their daily water quality report, which is posted on the internet at: <http://www.woco.water.ca.gov/cmplmon/reports/wqreport.html>. The current salinity (or EC) standard is 0.7 micromhos per centimeter (mmhos/cm.) Prior to April 2005, the EC standard was 1.0 mmhos/cm. The Station is labeled “C8” on Figure 3. (DWR 2006)

In general Reclamation has complied with salinity objectives since 1985, with the exception of the drought years 1987 and 1992. Hydrological conditions directly affect the water quality and flow regime of the river; however water quality objectives apply regardless of hydrological conditions. Since 1995, conditions have improved partly due to improved hydrologic conditions

and because of additional measures taken by Reclamation, DWR and many collaborating agencies. These measures include: 1) providing fresh water to dilute saline discharges and to increase flows upstream of Vernalis from New Melones Reservoir and through the Vernalis Adaptive Management Program (VAMP) agreement and 2) controlling discharge of saline water into the SJR upstream of Vernalis.

New Melones Reservoir releases plus the VAMP flow contributions averaged 722,000 acre-feet per year. The San Joaquin River Agreement (SJRA) commits Reclamation to fund water purchases to meet flow objectives on the SJR for VAMP. Under the SJRA, Reclamation and DWR agreed to spend up to \$3 million and \$1 million respectively per year to purchase VAMP water. (SJRA 2000)

The EC objective at Old River at Tracy Road Bridge (designated as “P12” in Figure 3) has been met 96 percent of the time since adoption of D-1641. (This station is located approximately four miles west of the Station on Old River toward Reclamation’s Delta export pumps.) The 1.0 EC objective at the time was exceeded for 90 days in 2003. From January 23, 2003, to April 22, 2003, the 30-day average EA at the Old River at Tracy Road Bridge station fluctuated between approximately 1.05 and 1.1 EC, slightly above the objective of 1.0 EC. (DWR 2006)

Reclamation and DWR reported the 2003 exceedance to the SWRCB Executive Director in October 2005. The delay in reporting was due to a lack of telemetry at two of the three southern Delta compliance stations. DWR became aware of the exceedance in late 2005 when reviewing data in preparation for a SWRCB hearing regarding the southern Delta objectives. At the time of the exceedance, only the Station had a real-time gage and was telemetered. The data at this station indicated that salinity in the southern Delta was within the required objective of 1.0 EC. EC data for the Old River at Tracy Road Bridge station was continuously recorded, but only downloaded from the field approximately monthly, after which this data was entered into a monitoring data base maintained by DWR’s Central District. Unfortunately DWR compliance staff relied on the data only from the Station to evaluate compliance. Consequently, the DWR compliance monitoring staff were not aware of this exceedance until 2005. This demonstrates the importance of multiple monitoring stations on key branch points of the waterways within the Delta. Readings fluctuate within fairly close proximity and therefore data from all monitoring stations is vital to provide information to monitor compliance and to make key water release decisions.

The San Joaquin River Water Quality Management Group completed draft recommendations in the summer of 2005 on resolution of water quality problems in the lower SJR (SJRWQMG 2005.) One of the recommendations included the development of a real-time water quality management coordinating group involving lower SJR tributaries, lower SJR drainers and DWR to coordinate reservoir release and CVP/SWP Project operations to realize opportunities to improve water quality and increase the utility of stored water releases. (DWR 2006)

Monitoring of water quality parameters at all stations within the Delta is crucial in providing information required for the Projects to meet State Board mandated water quality standards as well as maximize water storage and delivery for CVP contractors, a key component of Reclamation’s mission. With the reduction in the southern Delta salinity standard from 1.0 to 0.7 mmhos/cm, the Projects will have increasing challenges to meet the lower standard. Options for meeting this challenge may include additional releases from New Melones Reservoir to dilute

the flow with low salinity water or reducing salinity loading from upstream contributors such as the wetlands and agricultural drainage.

Due to the continuing pressures in the Delta (e.g. water quality and ecosystem stability), the trend is to require more real-time data from as many locations within the Delta as possible. This provides decision makers facing the interrelated and sometimes conflicting challenges in the Delta the information necessary to make the difficult decisions needed to ensure the health of the Delta and to provide maximum deliveries to CVP contractors.

3.1.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not reconstruct the Union Island Salinity Monitoring Station. Reclamation would lose a vital source of information for Delta decision-making and compliance determination. Lack of data could lead to violations of D-1641 water quality standards in the south Delta. A need to make otherwise unnecessary releases from New Melones to the detriment of CVP water contractor's supplies or requirements for more salt loading reductions by upstream dischargers. There potential effects are costly both in terms of dollars and in terms of water use.

Proposed Action

Under the Proposed Action, Reclamation reconstructs the Station. The proposed action would not result in substantial impacts to water resources because Reclamation and the contractor would conduct the work in a manner to best avoid disturbances to soils or sediment by implementing best management practices (refer to Appendix 1). All construction activities would be short in duration, occurring between the months of August through October to avoid impacts to fish. No obstructions for navigation would occur because the construction activities allow room for vessels to pass.

Fiberglass pilings used in this project would be continuously immersed for the life of the rebuilt Station. Although some construction materials, such as pressure treated wood, leach chemicals into the water way, fiberglass is inert and no chemical leaching occurs. (Pearless Pilings 2007) Therefore there would be no contamination to water supplies as fiberglass does not leach chemicals and the Delta already has a high exposure to fiberglass due to the popularity of boating activities in the Delta. Many of the boats in the Delta are fiberglass.

Cumulative Effects

This action has no potential to adversely affect surface water resources, therefore there are no cumulative effects associated with this project.

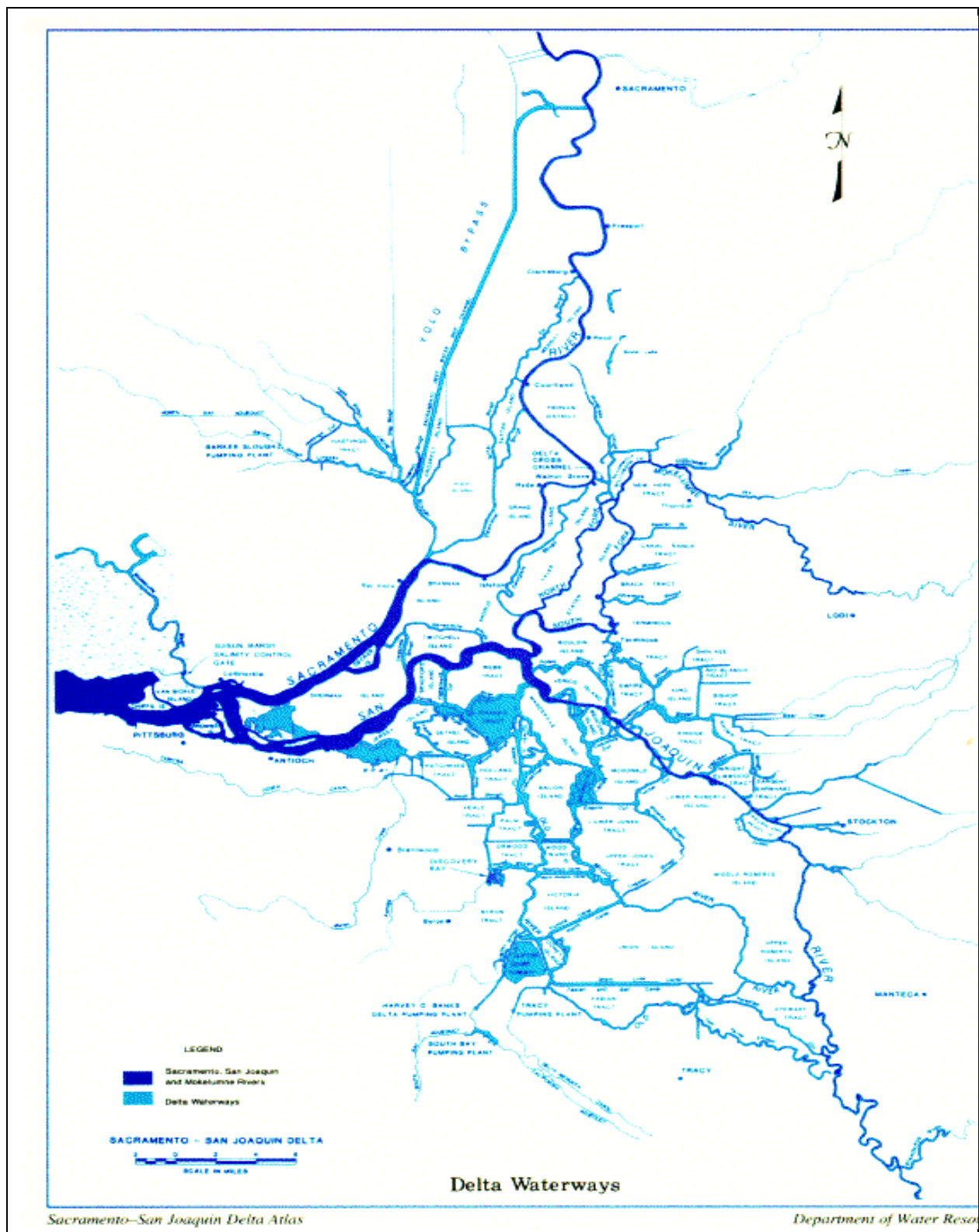


Figure 2

Table A. SWRCB Compliance Station Descriptions

Station Number	Station Description
C2	Sacramento River @ Collinsville
C4	San Joaquin River @ San Andreas Landing
C5	Contra Costa Canal @ Pumping Plan #1
C6	San Joaquin River @ Brandt Bridge
C8	Old River near Middle River
C9	West Canal @ mouth of Clifton Court Forebay Intake
C10	San Joaquin River near Vernalis
C13	Mokelumne River @ Terminous
C14	Sacramento River @ Port Chicago
C19	Cache Slough @ City of Vallejo Intake
D10	Sacramento River @ Chipps Island
D12	San Joaquin River @ Antioch Ship Canal
D15	San Joaquin River @ Jersey Point
D22	Sacramento River @ Emmaton
D24	Sacramento River below Rio Vista Bridge
D29	San Joaquin River @ Prisoners Point
DMC1	Delta-Mendota Canal @ Tracy Pumping Plant
P12	Old River @ Tracy Road Bridge
S21	Chadbourne Slough @ Sunrise Duck Club
S42	Suisun Slough 300 feet south of Volanti Slough
S49	Montezuma Slough near Beldon Landing
S64	Montezuma Slough @ National Steel
RSAC155	Sacramento River (I St. Bridge to Freeport)
SLBAR3	Barker Slough @ North Bay Aqueduct

3.2 Biological Resources

3.2.1 Affected Environment

The San Joaquin-Sacramento River Delta is a unique resource and important part of California's water system. The Delta provides habitat for several species of fish, birds, mammals and plants. Historically the Delta was dominated by perennial native grasslands, broad riparian zones and freshwater marsh wetlands. During the 1800's, settlers drained wetland and riparian areas and converted the land for agriculture. Grasslands were similarly eliminated from the region as a

result of concentrated grazing and agricultural conversion. Wetlands have been generally mapped as part of the National Wetland Inventory of the United States Fish and Wildlife Service (USFWS). San Joaquin County currently contains a range of vegetation and habitat types including urban, agricultural, riparian woodlands, seasonal wetlands, farmed wetlands, and non-native grasslands.

A rich and productive habitat for more than 500 species of wildlife, the Delta's unique ecosystem supports 20 endangered species, such as the salt harvest Suisun Marsh mouse and the Delta smelt, and serves as a vital migration path for salmon traveling to and from their home streams and to the Pacific Ocean.

When first explored by the Spanish in the 1770s, the Delta was a vast marsh covered with tules and teeming with wildlife. Settlers, mostly unsuccessful Forty-niners, began farming the region shortly after the start of the Gold Rush. To reclaim the land from swamplike conditions, they began to build levees. The levees were raised and strengthened over time and now protect islands whose surface can be 20 feet or more below the outside water level.

Vegetation areas and habitats, described below, host a wide range of wildlife and plant species that reflect the diversity in San Joaquin County. Each was considered in the analysis of biological impacts.

- **Farmed Wetlands:** Wetland areas that are currently in agricultural uses are defined as farmed wetlands.
- **Lakes, Ponds, and Open Water:** Includes both natural and man-made water bodies such as that associated with working landscapes, municipal water facilities, canals, creeks and rivers.
- **Seasonal Wetlands:** There are numerous seasonal wetlands throughout the County which typically fill with water during the wet winter months and then drain enough to become ideal plant habitats throughout the spring and summer.
- **Tidal Salt Ponds and Brackish Marsh:** Brackish marshes are areas affected by irregular tidal flooding with generally poor drainage and standing water.
- **Agricultural:** Much of the County is used for agricultural production. These areas include lands currently in agricultural use and lands that have been used for agricultural uses in the past but remain un-urbanized.
- **Urban:** these lands include the cities of Tracy, Stockton, Lodi, Manteca and Ripon.
- **Non-Native Grassland:** the majority of non-native grasslands that occur in the County are in the southern portion, and are often associated with grazing activities.

Critical Habitats within San Joaquin County

"Critical Habitat" is defined in Section 3(5) (A) of the Federal Endangered Species Act and includes:

- Areas within a listed species' current (at the time of listing) range that contain the physical or biological features that are essential to that species' conservation or that for some reason require special management; and
- Areas outside the species' current range that the secretary determines to be essential to its conservation.

Critical habitat for the delta smelt overlaps Union Island Salinity Monitoring Station. The primary constituent elements (PCEs) for this species do exist within the project area. Designated

and proposed critical habitat was queried from the U.S. Fish and Wildlife Service's website: http://www.fws.gov/pacific/sacramento/es/spp_list.htm. Other critical habitat was found for San Joaquin County but the PCEs for these species were not found within the project area.

Primary constituent elements are those physical and biological features of designated or proposed critical habitat essential to the conservation of the species, including but not limited to: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and (5) habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species (ESA § 3 (5)(A)(i), 50 CFR § 424.12(b)).



Salmon Migrate Through the Delta to Freshwater Rivers to Spawn

Potentially Affected Listed and Proposed Species and Critical Habitat

The following list was obtained on March 5, 2007, by accessing the U.S. Fish and Wildlife Database: http://www.fws.gov/pacific/sacramento/es/spp_lists/auto_list.cfm. The list is for the following 7 ½ minute U.S. Geological Survey quadrangles: Union Island and Lathrop. The Station is located close to the border of these two quadrangles. See Table 1 for the species and critical habitat on the combined list for these quadrangles (FWS, 2007). The document number associated with these findings is: 070316115438, contained (13) federally listed species under the jurisdiction of the Service. The CNDDB was also queried for federally listed or proposed species within 10 miles of the project area.

TABLE 1.0: FEDERAL STATUS SPECIES ON QUAD LISTS

<u>Common Name</u>	<u>Species Name</u>	<u>Fed Status</u>	<u>ESA</u>	<u>Summary basis for ESA determination</u>
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	NE	No individuals or habitat in area of effect
California tiger salamander	<i>Ambystoma californiense</i>	T	NE	No individuals or habitat in area of effect
California red-legged frog	<i>Rana aurora draytonii</i>	T	NE	None in area of effect
Central valley steelhead	<i>Oncorhynchus mykiss</i>	T	NE	No individuals or habitat in area of effect
Central Valley Spring-run salmon	<i>Oncorhynchus tshawytscha</i>	E	NE	No individuals or habitat in area of effect
Delta smelt	<i>Hypomesus transpacificus</i>	T	NE	No downstream effects from action
Giant garter snake	<i>Thamnophis gigas</i>	T	NE	No individuals or habitat in area of effect
Green Sturgeon	<i>Acipenser medirostris</i>	T	NE	No downstream effects from action
Riparian Brush Rabbit	<i>Sylvilagus bachmani riparius</i>	E	NE	No individuals or habitat in area of effect
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	NE	No elderberry shrubs in area of effect
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E	NE	No vernal pools in project area
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	NE	No vernal pools in area of effect
Vernal pool fairy shrimp - critical habitat		CH	NE	None in area of effect
Delta smelt	<i>Hypomesus transpacificus</i>	CH	NE	No downstream effects from action

Note: For the purposes of the above table: T = Threatened; E = Endangered; NE = No Effect; and CH = Critical Habitat

Photos have been taken at low tide in the immediate area of the Station replacement. They show the no vegetation within the footprint of the project.

3.2.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not approve the reconstruction of the Station. The site would continue to deteriorate and would eventually become unusable. The salinity in the southern Delta could possibly increase and effect species that depend on it for habitat.

Proposed Action

Under the Proposed Action, Reclamation would approve the reconstruction of Union Island Salinity Monitoring Station. This would be consistent with the current operations of the station and would allow for the collection of data needed to determine appropriate releases from New Melones into the Delta. Construction may have temporary effects to fish species during the pile driving activities. Construction has been scheduled outside of typical migration windows to avoid disturbance of T&E species. Water quality would improve slightly with the removal of the wooden pilings which had the potential to leach arsenic. Installation of the fiberglass pilings would not result in any chemical leachate over the life of the Station.

Cumulative Impacts

The Proposed Action, when added to other existing and proposed actions does not contribute to cumulative impacts to wildlife resources. No new facilities would be constructed that would prevent movement of a species or loss of foraging opportunities. The Proposed Action when added to other past, present and future actions in the Delta does not contribute or result in additional effects to listed species.

3.3 Archaeological and Cultural Resources

3.3.1 Affected Environment

Cultural resources is a broad term that is intended to include prehistoric, historic, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into account the effects of an undertaking on cultural resources that are listed or eligible for listing in the National Register of Historic Places (National Register). Cultural resources eligible for listing on the National Register are known as historic properties.

Cultural resources in this area are generally archaeological in nature and are often found in association with water courses. It is possible that some cultural resources lie undiscovered across the San Joaquin valley, but there has been no systematic study. Much of the area has been cultivated for decades and routinely tilled and irrigated. Any archaeological resources that may be present have been impacted by these agricultural practices.

3.3.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative Reclamation would not approve the reconstruction of Union Island Salinity Monitoring Station. The condition of archaeological and cultural resources would be the same as it would be under the existing conditions; therefore, no additional effects to archaeological and cultural resources are associated with this alternative.

Proposed Action

Under the Proposed Action there would be no potential to affect historic properties [36 CFR 800.3(a)(1)]. There are no new facilities being constructed, only the replacement of an already existing structure. The construction would take place in the existing footprint and would occur mostly offshore.

Cumulative Impacts

There are no cumulative impacts associated with this action that would affect archaeological and cultural resources.

3.4 Indian Trust Assets

3.4.1 Affected Environment

Indian trust assets (ITAs) are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individual Indians. The trust relationship

usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something. ITAs cannot be sold, leased or otherwise alienated without United States’ approval. ITAs may include lands, minerals, and natural resources, as well as hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITAs may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITAs reserved by Indian tribes, or individual Indians by treaty, statute, or Executive Order.

The nearest ITA to the Station is approximately 51 miles away and is the Chicken Ranch Rancheria.

3.4.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative there are no impacts to Indian Trust Assets, as there are no ITAs in the area.

Proposed Action

Under the Proposed Action there are no tribes possessing legal property interests held in trust by the United States, therefore ITAs are not affected by this action.

Cumulative Effects

There are no ITAs in the action area, therefore, the Proposed Action when added to other past present and future actions within the Delta do not contribute to cumulative affects to ITAs.

3.5 Socioeconomic

3.5.1 Affected Environment

With a population of more than 500,000, the Delta’s community is largely rural. The majority of its 738,000 acres is devoted to agriculture. Its fertile peat soil produces crops such as asparagus, pears, corn, grain and hay, sugar beets, and tomatoes, which bring in over \$500 million annually. Railways, highways, and utilities crisscross the Delta. Ships, traveling up and down deepwater channels to Sacramento and Stockton, transport millions of tons of cargo to busy ports. Thousands of recreational boats ply its other waterways, smaller channels winding around leveed island tracts, in search of fun and fish. And visitors sightsee at popular historical spots such as the town of Locke, a Chinese settlement once known for its culture and entertainment, and the Ryde Hotel, one of the State’s earliest. (DWR 2006)

San Joaquin County, where the salinity station in question is located, is 20-40 minutes from the Bay Area depending on location and is centrally located to several large metropolitan areas. San Joaquin County has a total estimated population of 630,600 as of 2005 with a projected future

population of 840,738 by 2010. The County's economy thrives on agriculture and manufacturing. Stockton the County seat is one of the largest growing cities in California with an estimated population of 271,466. The median income for a household in the County is 42,749 as per 2003 data and the County hold one of the most diverse and skilled labor forces in the Central Valley. There is approximately 14.7 percent of the population living below the poverty level. San Joaquin County daytime workers are primarily in professional and business services, retail and manufacturing.

3.5.2 Environmental Consequences

No Action Alternative

The socioeconomic conditions under the No Action Alternative may deteriorate slightly as there is a potential for less water to be available to northern San Joaquin Valley farmers. If unnecessary releases were made from New Melones due to a lack of salinity data in the southern Delta, some farmers would have less CVP supplies due to reduced stored water availability. It is likely that rather than reduce farming operations these farmers would find alternative water supplies to meet their needs.

Proposed Action

The Proposed Action would not cause or facilitate any environmental or socioeconomic changes over existing conditions in San Joaquin County. No effects to socioeconomic resources are associated with the Proposed Action when compared to the No Action Alternative.

Cumulative Impacts

The Proposed Action would have no potential affects to socioeconomic resources; therefore no cumulative affects are associated with this project.

3.6 Environmental Justice

3.6.1 Affected Environment

Executive Order 12898 requires all NEPA documents to consider the effects of the proposed action(s) on disadvantaged and minority populations. Many of the cities and towns within the San Joaquin Valley are farming communities, and include high percentages of minority populations. Some areas are centers for migrant laborers whose livelihood depends exclusively on the seasonal agricultural practices providing them with sufficient income to support themselves and their families.

3.6.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, conditions would remain the same as existing conditions; therefore, no additional impacts are associated with this alternative.

Proposed Action

This Action would cause no harm to minority or disadvantaged populations with San Joaquin County. These populations/communities are unlikely to be greatly affected by the relatively minor reconstruction of this facility, because there are no anticipated changes in land use, commodities, or practices. No disproportional impacts to economically disadvantaged or

minority populations are associated with the Proposed Action when compared to the No Action Alternative.

Cumulative Effects

This action would have no measurable impact on minority or disadvantaged populations within San Joaquin County, therefore, there are no cumulative effects associated with this action.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the Fish and Wildlife Service and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." The Proposed Action would not cause water diversion or impoundment and therefore there would be no coordination needed under the FWCA.

4.2 Endangered Species Act (16 USC. 1521 et seq.)

Section 7 of the Endangered Species Act requires federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. Reclamation is currently discussing this project with the USFWS. Consultation will be complete prior to the finalization of this EA.

4.3 National Historic Preservation Act (16 USC 470 et seq.)

The NHPA of 1966, as amended (16 USC 470 *et seq.*), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register of Historic Places. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the National Register. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the area of potential effect (APE), conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties. No new land use, and very limited ground disturbing activities would occur as a result of the Proposed Action. Therefore, the proposed action has no potential to affect historic properties [36 CFR 800.3(a)(1)].

4.4 Migratory Bird Treaty Act (16 USC Sec. 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

4.5 Executive Order 11988 – Floodplain Management and Executive Order 11990 - Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. This project would not affect either concern.

Section 5 List of Preparers and Reviewers

Judi Tapia, Natural Resource Specialist, SCCAO
Taylor Watson, Natural Resource Specialist, SCCAO
BranDee Bruce, Architectural Historian – Mid Pacific Region
Patricia Rivera, Indian Trust Representative, Mid Pacific Region
Ned Gruenhagen, Wildlife Biologist, SCCAO

Section 6 References

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U.S. Bureau of Reclamation. June 5, 2007. Personal communication with Reclamation representative Mr. Brian Shinmoto

Appendix A

Listed Species

Invertebrates

- *Branchinecta lynchi*
 - vernal pool fairy shrimp (T)
- *Desmocerus californicus dimorphus*
 - valley elderberry longhorn beetle (T)
- *Lepidurus packardii*
 - vernal pool tadpole shrimp (E)

Fish

- *Acipenser medirostris*
 - green sturgeon (T) (NMFS)
- *Hypomesus transpacificus*
 - Critical habitat, delta smelt (X)
 - delta smelt (T)
- *Oncorhynchus mykiss*
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)
- *Oncorhynchus tshawytscha*
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
- *Rana aurora draytonii*
 - California red-legged frog (T)

Reptiles

- *Thamnophis gigas*
 - giant garter snake (T)

Birds

- *Haliaeetus leucocephalus*
 - bald eagle (T)

Mammals

- *Sylvilagus bachmani riparius*
 - riparian brush rabbit (E)

Candidate Species**Fish**

- *Oncorhynchus tshawytscha*
 - Central Valley fall/late fall-run chinook salmon (C) (NMFS)

Quads Containing Listed, Proposed or Candidate Species:

UNION ISLAND (462C)

LATHROP (462D)

Obtained 6/3/07

Data base last updated March 2007

Appendix 2

(Information from Pearson Fiberglass' Website)

Pearson Fiberglass Pilings are Driven to Last

Fiberglass Piling Construction

Patent Pending. A pressure assisted vacuum molding process creates seamless fiberglass composite pilings. This environmentally-friendly system produces a superior piling.

Fiberglass Piling Characteristics

- Fiberglass pilings are easily cut and spliced in the field.
- "PPT" outer layer provides for exceptional Ultra Violet radiation protection.
- Light weight - Fiberglass pilings are 1/3 the weight of comparable wood and 1/4 the weight of steel.
- 100% corrosion resistant & impervious to rot.
- 100% resistant to insect, borer, and marine growth attack.
- No coatings or preservatives needed or required.
- Consistent weight, diameter, and straightness.
- Engineered products available for any length.
- Available in standard 20' and 40' lengths. Custom piling lengths available.
- Attractive for marina and residential applications.

Fiberglass Piling Hardware

- Composite caps and connectors (Optional).
- Fiberglass pilings can be drilled, cut, and fastened similar to wood.

Fiberglass Piling Exterior

Smooth, matte dark brown "PPT" finish. This tough plastic finish provides protection from the sun's harmful Ultra Violet Rays and protection from abrasion.

Fiberglass Composite Pilings Why Switch from Wood, Steel or Concrete?

Wood rots. Steel rusts. Concrete deteriorates. Fiberglass lasts. Just ask those in the boat building industry. Whether you are building a commercial or residential pier or dock, you can now choose composite pilings that not only outlast all others, but have many other unique benefits:

- **No leaching of harmful coatings or preservatives into the environment.**
- **Greater long-term value.**
Pearson Composite Pilings will be the last pilings you'll ever need to buy and install, making them a smart investment for significant long-term savings.
- **Easier handling during installation.**
Composite pilings are approximately 1/3 the weight of wood and 1/4 the weight of steel.
- **Eliminates costly waste of materials.**
Our composite pilings are available in 10", 12", and 14" diameters from 20' to 40' lengths in 5' increments. Custom composite piling lengths are available upon request.
- **No harmful splinters or ugly rust.**
Our composite pilings have a smooth, attractive, natural brown "PPT" finish that will look and feel new - no harmful splinters or ugly rust. Our "PPT" plastic coating protects the composite piling from harmful UV rays.
- **Easily drilled, cut, and fastened.**
- **Aesthetic appeal increases property value.**

Installation Information

Length

- Pearson [Fiberglass Pilings](#) are available in 20' to 40' lengths in increments of 5' which helps eliminate costly waste of materials.
- Longer lengths are available. We are able to splice pilings to meet your needs.

Weight

- Lighter than wood, steel or concrete - transportation, handling, and installation are much easier and less costly.
- Pilings up to 30-feet can be easily handled by two people.
- Pilings can be more easily brought to job sites where access is limited.

Installation

- Pearson [Composite Pilings](#) are strong enough to be driven to the highest level of resistance.
- Pearson Pilings are hollow, allowing our piling to be installed over existing pilings, reducing the need to remove old pilings, saving labor and disposal costs.

Our Pilings are easily drilled, cut, and fastened. And we guarantee - no splinters!